

TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
MUE-0002In Re Application Of: **KRISTIAN PFAFFELHUBER ET AL.**Serial No.
09/868,680Filing Date
AUG. 20, 2003Examiner
K.R. LOCKETTGroup Art Unit
2837

Invention:

SOUND SHIELDING ELEMENT, USE THEREOF AND METHOD FOR PRODUCING THE SAME

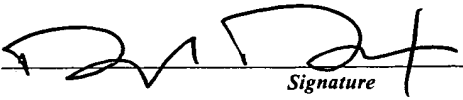
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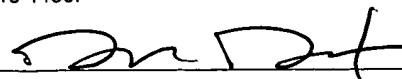
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APPLICANT: KLAUS PFAFFELHUBER ET AL.)
) Group Art Unit:
) 2837
SERIAL NUMBER: 09/868,680)
) Before the Examiner:
FILED: August 20, 2001) K. Lockett
)
FOR: SOUND SHIELDING ELEMENT,)
USE THEREOF AND METHOD)
OF PRODUCING THE SAME)

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APPEAL BRIEF

1. THE REAL PARTY IN INTEREST

The real party in interest in this appeal is FAIST AUTOMOTIVE GMBH & CO. KG. Ownership thereby is established by assignment document recorded for this application on August 20, 2001 on Reel 012089 Frame 0061.

2. RELATED APPEALS AND INTERFERENCES

Neither Appellants, Appellants' legal representative, nor Assignee know of any other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the present appeal.

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3. STATUS OF CLAIMS

Currently, claims 1-35 are pending. All pending claims stand rejected under 35 U.S.C. §§102(b) and 103(a). Appellants presently appeal from the rejection of all pending claims 1-35.

4. STATUS OF AMENDMENTS

There have been no amendments filed subsequent to receipt of the final office action.

5. SUMMARY OF INVENTION

The present invention relates generally to sound shielding equipment and, more particularly, to a sound shielding element for protecting against propagation of sound from an area of noise to a neighboring space or for covering sound-reflecting or sound-generating parts and the like.

Sound absorbers and sound attenuators for use in preventing movement of sound from one space to another and for covering and quieting noise making machinery, etc., are known. Such absorbers and attenuators include: chamber-like device with interior spaces for attenuating entering sound waves by resonance effects; porous materials such as foams or nonwoven fabrics for dampening sounds; film and membrane absorbers including a film or sheet which vibrates in response to sound waves thus dissipating the same; large glass or plastic panels used, for example, in concert halls, having a thickness of 2mm to 30mm with holes formed therein having diameters of 0.2mm to 2mm and having a spacing of 2mm to 20mm between adjacent holes; etc.

However, these known sound absorbers and sound attenuators often require a large amount of space for effective operation thereof. Further, many of the known sound absorbers and attenuators may be suited for use in or on walls in a building, for example, but are not readily adaptable for shielding noise making mechanical elements and, specifically, are not suited for use in the confined areas of an automobile.

The present invention is directed toward an improved sound shielding element that is simple to produce, requires only limited space for effective operation, and is suitable for use in a variety of applications, particularly those associated with automobiles and automotive parts. The invention also provides a method of forming such sound shielding element.

Particularly, a sound shielding element is disclosed for protection from sound propagation from a noise area of a room or space into a neighboring room or space. As set forth in claim 1, the sound shielding element includes at least one panel or layer and a plurality of small perforations formed in the panel or layer. The perforations are recited as including an average width or diameter between 0.001 and 0.7mm. A hole to surface ratio is described as being between 0.001 and 8%. The width/diameter of the perforations and the hole/surface ratio is such that sound waves entering the perforations initiate physical effects in a gas volume contained within the perforations. A method of forming the sound shielding element is recited in claim 29 as comprising forming said panel or layer by fusing or bonding particles or fibers.

The invention is shown in one embodiment in Figure 1. Therein, a shielding panel 1 is shown as including perforations 2. Page 11, line 14. (Please note, citations herein refer to particular page and line designations of the English

translation of the application as filed.) The shielding panel 1 is specifically oriented for being fastened to the floor of a motor vehicle proximate the exhaust system for shielding against heat and sound emanating therefrom. Page 10, lines 3-8. Figure 2 shows another shielding element of the invention, again comprising the panel 1 having perforations 2 formed screen-like thereon. Page 12, line 3. This embodiment of the shielding element is intended to cover a motor vehicle engine and correspondingly shield against noise and heat discharged from the engine. Page 10, lines 9-12 and page 12, lines 3-4.

The sound shielding element or panel 1 is shown schematically in Figures 3A and 3B. Therein, the perforations 2 are shown only in certain areas of the panel 1 for purposes of simplicity; however the perforations 2 are described as preferably covering the entire surface of the panel 1 in the form of a regular network and are disposed in lines. Page 12, lines 20-26. The perforations 2 pass through the entire panel 1, from one side to the other. *Id.* at lines 9-10.

The perforations 2 of the invention are described as including a variety of shapes and configurations, including: circular shaped perforations, as shown in Figures 4 and 5; slot-like perforations, shown in Figures 6, 8 and 9; and lozenge-shaped perforations forming a honey-comb-like pattern, as shown in Figure 7.

The perforations are described as including an average diameter, in the case of circular shaped perforations, or an average width, in the case of slot, etc. shaped perforations, of between 0.001 and 2mm and particularly between 0.01 and 0.7mm. Page 2, lines 22-28. The perforations are further described as including a hole/surface ratio of between 0.001 and 20%. *Id.*

The sound shielding element, as represented by panel 1 in the Figures, is configured as a self-supporting, molded sound shielding part so that additional

layers, to form a laminated multi-layer element, are not required. Page 6, lines 20-24. The molded part may have a multi-layer structure or consist simply as a single layer only. Page 7, lines 24-25.

The sound shielding element of the invention effectively attenuates sound by physical effects initiated in a gas volume contained in the perforations. Page 13, lines 14-20. That is, a predetermined volume of air delimited by the dimensions of the perforations dampen and otherwise attenuate sound waves entering therein. *Id.*

In sum, the invention provides a sound shielding element which effectively attenuates sound without requiring a multiple layered laminate or other bulky configuration of the prior art and which is economically manufactured, easily disposed of, and is usable in a plurality of applications including those associated with motor vehicles.

6. ISSUES

The following issues are on appeal: (1) whether the Examiner's rejection under 35 U.S.C. §102(b) of claims 1, 2, 29, and 33 as being unpatentable in view of U.S. Patent No. 4,263,356 to Nomura et al. is improper; (2) whether the Examiner's rejection under 35 U.S.C. §103(a) of claims 3, 5-10, 13, 15, 16, 30, and 31 as being unpatentable in view of Nomura and U.S. Patent No. 4,347,912 to Flocke et al. is improper; (3) whether The Examiner's rejection under §103(a) of claims 17-26 in view of Nomura, Flocke, and U.S. Patent No. 5,959,265 to Van Ligten is improper; and (4) whether the Examiner's rejection under §103(a) of claims 34 and 35 in view of Nomura, Flocke, and U.S. Patent No. 6,296,076 to Hiers et al., is improper.

7. GROUPING OF CLAIMS

There are four groups of claims in the present appeal, as follows: Group 1, claims 1, 2, 29, and 33; Group 2, claims 3, 5-10, 13, 15, 16, 30, and 31; Group 3, claims 17-26; and Group 4, claims 34-35. The claims of each group stand or fall together with respect to the Examiner's contested rejections issued under 35 U.S.C. §§102 and 103.

8. ARGUMENT

A. Claims 1, 2, 29, and 33 are patentable under 35 U.S.C. §102(b) with respect to the Nomura reference.

The Examiner's rejection of the first group of claims, i.e., claims 1-2, 29, 33, under 35 U.S.C. §102(b) as being anticipated by Nomura is improper because the relied-upon reference fails to teach all of the limitations of the rejected claims.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the * * * claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Claim 1 recites a sound shielding element, comprising, *inter alia*, a plurality of small perforations formed in at least one panel or layer, where an average diameter or width of the perforations ranges between 0.001 and 0.7 mm and a hole/surface ratio ranges between 0.001 and 8 % so that sound waves entering said perforations initiate physical effects in a gas volume contained in said perforations.

As will now be shown, at least these limitations of claim 1 are not taught by the relied upon reference.

The Nomura patent is directed toward an acoustic ceiling panel for an automobile having two opposed foamed plastic layers and a metal lathe disposed therebetween where both the foamed plastic layers include holes formed therethrough. Col. 1, lines 6-7, lines 42-52; Col. 2, lines 39-65. The patent addresses a problem encountered in the prior art of mis-alignment of the through holes of the first and second opposed layers. *Id.*

Particularly, Nomura discloses a multi-layer laminate consisting of a first, a second, and a third foamed plastic layer designated by reference numerals 1, 2, and 3, respectively, in Figures 1 and 2. *Id.* The patent further discloses a metal lathe 6 disposed between the second and third foamed plastic layers 2 and 3, respectively. *Id.* The second foamed plastic layer 2 is bonded or fused to the top of the first foamed plastic layer 1 and includes a large number of through holes of diameter 0.1 – 5.0mm bored to an open ratio of 0.5 – 30%. *Id.* The third foamed plastic layer 3 is bonded or fused to the top of the second foamed plastic layer 2 through the metal lathe 6 and includes a plurality of through holes 5 having diameters of 1.0 – 10mm bored to an open ratio of 1.0 – 50%.

The Nomura patent addresses the mentioned prior art problem of through hole mis-alignment by providing holes 5 in the third foamed plastic layer 3 of larger diameter than the holes 4 of the second foamed plastic layer 2 and by providing said holes in the concentrations discussed above. Col. 4, lines 5-10. These features increase the probability that the smaller holes 4 will overlap the larger holes 5 and thus provide the desired pathways through both second and third foamed plastic layers 2 and 3, respectively. Col. 4, lines 38-44.

However, the Nomura reference clearly does not teach each and every limitation of the rejected claims, as required by §102(b) and the guiding case law to uphold the Examiner's novelty rejection. Specifically, Nomura does not teach perforations having an average diameter or width (herein, "diameter/width") ranging between 0.001 and 0.7mm nor a hole to surface (herein, "hole/surface") ratio of 0.001 to 8%, as recited by claim 1. Additionally, the reference does not disclose perforations which include these parameters so that sound waves entering said perforations initiate physical effects in a gas volume contained in said perforations, as further recited by claim 1.

As discussed, Nomura discloses a second and a third foamed plastic layer 2 and 3, respectively, each including through holes 4 and 5, respectively. The through holes 4 include diameters 0.1 – 5.0mm and are bored to an open ratio of 0.5 – 30% while the through holes 5 include diameters of 1.0 – 10mm and are bored to an open ratio of 1.0 – 50%. The reference does not describe either holes 4 or 5 as having a diameter/width of 0.001 and 0.7mm, as recited in claim 1. To the contrary, the diameters disclosed by Nomura are significantly larger than those claimed by Appellant. Additionally, Nomura does not teach the claimed hole/surface ratio of 0.001 to 8%. Here again, Nomura's disclosed range is significantly larger than Appellant's.

Prior art which teaches a range within, overlapping, or touching the claimed range anticipates if the prior art range discloses the claimed range with sufficient specificity. MPEP 2131.03. The question of "sufficient specificity" is a case by case, fact-based determination and is considered similar to that of "clearly envisaging" a species from a generic teaching. *Id.* That is, a prior art range which is within, overlapping, or touching a claimed range anticipates the claimed range only where one of ordinary skill in the art is able to at once envisage claimed

subject matter based upon the prior art disclosure. MPEP 2131.02.

As discussed above, Nomura does not specifically disclose the diameter/width and hole/surface ratios of claim 1. Further, it is noted with particular emphasis that Nomura's invention is specifically limited to the disclosed diameter and open ratio ranges and thus would not enable one to *at once envisage* the recited ranges of claim 1, as required to establish anticipation. Particularly, the reference states that if the size of the holes 4 is less than 0.1mm in the second foamed plastic layer 2, the acoustic performance will be poor. Col. 3, lines 54-64. Further, Nomura states that if the diameter of the holes 4 is greater than 5.0mm, then the holes 5 of larger diameter would not be unobtainable in the third layer. *Id.* With respect to this third layer, Nomura states that if the holes 5 formed therein have diameters of less than 1.0mm then the required concentration of holes will not be achieved and acoustic performance will degrade. *Id.* The patent then states that if the holes 5 of the third layer 3 are of diameters greater than 10mm, defective products are likely during manufacture of the ceiling panel. *Id.* Finally, Nomura notes that if the open ratio of the holes 4 and 5 is less than 0.5% and is less than 1.0%, respectively, the efficiency of sound absorption will be poor. Col. 3, line 65 – Col. 4, line 4.

Thus, Nomura explicitly teaches that the diameter/width range of 0.001 – 0.7mm of claim 1 is *not possible* with respect to the invention disclosed by the reference. Further, the patent explicitly teaches that the hole/surface ratio of 0.001 – 8.0mm of claim 1 is also *not possible*.

Therefore, not only does Nomura fail to disclose the specific diameter/width range and the hole/surface ratio range of claim 1, but the disclosure of Nomura further prohibits any reading thereof which may attempt to

imply that the claimed ranges are disclosed inherently or implicitly thereby. Moreover, any modification of the reference to include the claimed ranges, for example, an assumed modification made by the Examiner in issuing a rejection under 35 U.S.C. 103, would be improper.

Still further, the specific limitations of the Nomura patent concerning the diameters of the perforations and the open ratio of the holes would not allow one of ordinary skill in the art to at once envisage the recited ranges of Applicant's claim 1. Thus, even if the relevant ranges of the Nomura patent are within, overlapping, or touching the recited ranges of claim 1, the reference does not disclose such with the required degree of *sufficient specificity* to maintain the present anticipation rejection.

Additionally, as mentioned above, Nomura does not disclose perforations including the claimed ranges so that sound waves entering said perforations initiate physical effects in a gas volume contained in said perforations, as recited by claim 1. Instead, for sound absorption the reference relies upon two separate pluralities of holes 4, 5, having two different diameters, formed in two distinct layers 2, 3, and fused about a metal lathe 6. Appellant's invention, on the other hand, comprises perforations of specific dimensions formed in a single panel or layer in order to delimit particular gas volumes which receive sound waves and, through certain physical effects, absorb and/or attenuate the same. Appellant's invention does not require multiple layers and multiple sets of holes, as required by Nomura.

Accordingly, the Nomura reference clearly fails to teach, or even suggest, all of the recited limitations of Appellant's claim 1. Thus, the Examiner's novelty rejection of claim 1 under 35 U.S.C. §102(b) based upon Nomura is improper and

may not be maintained.

Correspondingly, the §102(b) rejection of claim 2 is improper and may not be maintained because claim 2 directly depends from allowable claim 1 and is thusly allowable.

Independent claim 29 discloses the diameter/width range and the hole/surface range recited in claim 1. As discussed, at least these limitations are not taught or otherwise suggested by Nomura. Accordingly, claim 29 is allowable over Nomura. Further claim 29 recites a method of producing a sound shielding element comprising, *inter alia*, forming a panel or layer by fusing or bonding particles or fibers. To the contrary, Nomura teaches a panel consisting of foamed plastic layers. Col. 2, lines 39-65. The foamed plastic layers of Nomura are clearly formed by *foaming* processes, not by fusing or bonding particles or fibers, as required by claim 29.

Thus, the Nomura patent fails to teach, or even suggest, all of the limitations of claim 29. Therefore, the anticipation rejection of claim 29 under 35 U.S.C. §102(b) is improper and may not be maintained.

Correspondingly, the §102(b) rejection of claim 33 is improper and may not be maintained because claim 2 depends from allowable claim 29 and is thusly allowable.

Accordingly, as shown, each and every element as set forth in claims 1, 2, 29, and 33 is not found, either expressly or inherently described, in Nomura patent. Moreover, the identical invention is not shown in Nomura in as complete detail as is contained in the rejected claims. Thus, Examiner's rejection of claims 1, 2, 10, and 29 under 35 U.S.C. §102(b) is improper; reconsideration and

withdrawal thereof is respectfully requested.

B. Claims 3, 5-10, 13, 15, 16, 30, and 31 are patentable under 35 U.S.C. §103(a) in view of Nomura and Flocke

The Examiner's rejection of the second group of claims, i.e., claims 3, 5-10, 13, 15, 16, 30, and 31, under 35 U.S.C. §103(a) as being obvious in view of Nomura and Flocke, is improper.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that all elements of the invention are disclosed in the prior art; that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or combined references; and that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

(1) The combined references fail to disclose all the elements of the claimed invention, thus prima facie obviousness does not exist.

The rejected claims 3, 5-10, 13, 15, 16, 30, and 31 variously depend from claims 1 or 29. Claims 1 and 29 are allowable, as discussed above in Section 8.A, because the cited references fail to disclose all of the claimed limitations. The rejected claims, as depending from claims 1 or 29, include all of the

limitations recited therein and include additional limitations. Accordingly, the cited references, including Nomura and Flocke, fail to teach all of the limitations of claims 3, 5-10, 13, 15, 16, 30, and 31, thus prima facie obvious does not exist and these claims are allowable.

As mentioned, the rejected claims 3, 5-10, 13, 15, 16, 30, and 31 include limitations additional to those recited in the base claims 1 and 29. These additional limitations are not found in the relied upon references, thus lending further to the patentability of the claims. A brief discussion of such novel and nonobvious limitations now follows.

Claim 3 recites all of the limitations of claim 1 (see discussion above in Section 8.A.) and further recites the panel as including a thickness of between 0.05 and 4mm, the average diameter or width of the perforations being between 0.01 and 0.7mm, and the hole/surface ratio being between 0.01 and 5%.

For at least the reasons discussed herein above, these additional limitations are not disclosed by Nomura.

Turning now to Flocke, the reference discloses an airborne sound absorbing wall or ceiling panel 2 affixed to a ceiling 1 by rods 3. Col. 3, lines 57-68. The panel 2 consists of a non-woven fabric 4 adhered to a top surface of a plate 6 by an adhesive layer 5. *Id.* The plate 6 includes perforations 7 formed therethrough having diameters of about 6mm and a hole/area ratio of 20%. Col. 4, lines 1-6. Flocke does not specifically disclose a thickness of the plate 6.

Thus, Flocke clearly does not teach, or even suggest, the claim 3 limitations of a panel thickness of 0.05 to 4mm, nor a perforation diameter/width of 0.01 to 0.7mm, nor a hole/surface ratio of between 0.01 and 5% with *sufficient*

specificity as required by MPEP 2131.03.

Accordingly Nomura and Flocke, taken singularly or in combination fail to teach or suggest all of the limitations of claim 3. Thus, claim 3 is allowable.

Appellants' claim 5 includes all of the limitations of allowable claim 1 and further defines the perforations as "narrow or fine slots..." Both Nomura and Flocke only disclose *circular* perforations. Accordingly, claim 5 is clearly allowable, even in view of a combination of the Nomura and Flocke patents.

Claim 6 depends from claim 5 is allowable for at least the reasons that claim 5 is allowable.

Claim 7 includes the limitations of claim 1 and further recites the panel as a three-dimensionally shaped moulded part that is injection moulded or pressed from synthetic material. To the contrary, Nomura discloses *foamed plastic* layers 1, 2, 3 (Col. 2, lines 39-68) while Flocke teaches a perforated plate made of a metallic or mineral material (Col. 3, lines 34-39). Clearly, the features of claim 7 are not disclosed by Nomura and/or Flocke.

Claims 10 and 11 depend from claim 7 and are allowable for at least the reasons that claim 7 is allowable.

Claims 8, 9, 13, 15, and 16 all depend directly from claim 1 and thus contain all of the limitations of claim 1 and additional limitations. Therefore, claims 8, 9, 13, 15, and 16 are correspondingly allowable.

Claim 30 includes all of the limitations of claim 29 and additionally recites that the panel is produced by weaving threads formed of fibers. Nomura, as mentioned, teaches *foamed plastic* layers 1, 2, 3 (Col. 2, lines 39-68) while

Flocke describes a perforated plate made of a metallic or mineral material (Col. 3, lines 34-39). Clearly, a panel formed by “weaving threads formed of fibers”, as recited by claim 30, is not taught by the references.

Claim 31 includes the limitations of claim 29 and describes the panel as being produced by impregnating a textile tissue with a thermoplastic material and molding into a three-dimensional shape. As mentioned above, Nomura teaches foamed plastic and Flocke teaches metallic or mineral material, and thus claim 31 is allowable.

The Nomura and Flocke references, taken singularly or in combination, fail to teach or suggest all of the limitations of claims 3, 5-10, 13, 15, 16, 30, and 31. Accordingly, these claims are allowable over the references and the Examiner’s rejection issued under §103 is improper and may not be maintained.

(2) There is no motivation to combine the references.

Appellants submit that there is no motivation to combine Nomura and Flocke, as suggested by the Examiner.

The test for determining whether there is a suggestion or motivation to combine the references is whether there is some teaching, suggestion, or motivation to combined the references either explicitly or implicitly in the reference themselves or in the knowledge generally available to one of ordinary skill in the art.

“In determining the propriety of the Patent Office case for obviousness in the first instance, it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other

modification.” *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972).

The Nomura patent is directed toward a ceiling panel. See discussion above in Section 8.A. The Flocke patent concerns a suspended ceiling panel for use in a room. See above, Section 8.B.(1). While both references generally regard sound absorption technologies, they are clearly directed toward entirely distinct applications. Additionally, their means of attenuation are completely different: Nomura utilizes a series of perforations 4, 5 and a metal lathe 6, while Flocke relies upon a nonwoven layer 4. Accordingly, due to the obvious differences and the distinct nature of Nomura and Flocke, there is clearly no suggestion or motivation in the references or in the art to combine the patents as proposed by the Examiner.

Moreover, one of ordinary skill in the art would be further unlikely to combine the references in attempts to achieve the claimed invention because, as discussed above, such combination would not result in all of the limitations of the rejected claims.

Accordingly, there is no suggestion or motivation to combine the relied upon references, thus prima facie obviousness does not exist and the Examiner’s rejection of claims 3, 5-10, 13, 15, 16, 30, and 31 is improper and may not be maintained.

(3) There is no reasonable expectation of success.

The Nomura and Flocke references, taken singularly or in combination, fail to teach all of the limitations of the rejected claims. See above, Section 8.B.(1). Accordingly, even if the references were combined, the claimed invention would not result. Therefore, one of ordinary skill in the art would in no

way have a reasonable expectation of success in combining the references. Thus, for at least this reason, prima facie obviousness does not exist; the Examiner's rejection of claims 3, 5-10, 13, 15, 16, 30, and 31 is improper and may not be maintained.

C. Claims 17-26 are patentable under 35 U.S.C. §103(a) in view of Nomura, Flocke, and Van Ligten.

The Examiner's rejection of the third group of claims, i.e., claims 17-26, under 35 U.S.C. §103(a) as being obvious in view of Nomura, Flocke, and Van Ligten is improper.

The requirements to establish obviousness are set forth herein above at Section 8.B. None of these requirements are met in the Examiner's rejection of claims 17-26.

(1) The combined references fail to disclose all the elements of the claimed invention, thus prima facie obviousness does not exist.

The rejected claims 17-26 variously depend from claim 1. Claim 1 is allowable, as discussed above in Section 8.A, because the cited references fail to disclose all of the claimed limitations. The rejected claims, as depending from claim 1, include all of the limitations recited therein and include additional limitations. Accordingly, the cited references, including Nomura, Flocke, and Hiers, fail to teach all of the limitations of claims 17-26, thus prima facie obvious does not exist and these claims are allowable.

As mentioned, the rejected claims 17-26 include limitations additional to those recited in the base claim 1. These additional limitations are not found in the

relied upon references, thus lending further to the patentability of the claims. For example, claims 17-26 describe shielding element of claim 1 as a unit for covering cables, a wheel case shell for motor vehicles, a hat rack in motor vehicles, a seat cover, a door lining, etc. Such a sound shielding element is simply not taught or suggested by Nomura, Flocke, and/or Van Ligten.

As mentioned, Nomura discloses an acoustic panel for a ceiling of an automobile, while Flocke teaches a suspended acoustic panel for use in a room.

Van Ligten teaches forming a structure of a laminate of two reflecting layers kept in a distance from each other. The function thereof depends on the wave length requiring much bigger hole diameters (between 4 and 11 mm – see col. 1, line 48) then the claimed limitations. The sound absorber of Van Ligten needs an adjacent sound-reflecting surface in order to create interferences because of the phased shifted waves of the Helmholtz resonator. On the contrary, the claimed invention does not need such additional adjacent sound-reflecting surface.

Van Ligten teaches a Helmholtz, tube-type resonator which clearly does not teach the limitations of claims 17-26 nor remedy the above-discussed deficiencies of Nomura and Flocke.

Accordingly, the Nomura, Flocke, and Van Ligten references, taken singularly or in combination, clearly fail to teach or suggest all of the limitations of claim 17-26. Thus, the Examiner's rejection of these claims under §103 is improper and may not be maintained.

(2) There is no suggestion or motivation to combine the references.

The Nomura reference is directed toward a laminate sound absorber for an

automobile ceiling, Flocke concerns a suspending acoustic panel for a room, and Van Ligten regards a Helmholtz, tube-type resonator for a motor vehicle. While the references generally disclose sound-concerning assemblies, they are clearly directed to distinct applications and technologies. Thus, one of ordinary skill in the art would not find a suggestion or motivation in these references or in the art to combine the patents in attempts to form the claimed invention.

Moreover, there further exists not suggestion or motivation to combine the references in that such combination would not result in the claimed invention because the references fail to disclose all of the recited limitations.

Accordingly, prima facie obviousness is not found. The Examiner's rejection of claims 17-26 is improper and may not be maintained.

(3) There is no reasonable likelihood of success.

As discussed, the Nomura, Flocke, and Van Ligten references, taken singularly or in combination, fail to teach or suggest all of the limitations of claims 17-26. Accordingly, even if the references were combined, the claimed invention would not result. Therefore, one of ordinary skill in the art would in no way have a reasonable expectation of success in combining the references. Thus, for at least this reason, prima facie obviousness does not exist; the Examiner's rejection of claims 17-26 is improper and may not be maintained.

D. Claims 34 and 35 are patentable under 35 U.S.C. §103(a) in view of Nomura, Flocke, and Hiers.

Prima facie obviousness does not exist with respect to the Examiner's proposed combination of the Nomura, Flocke, and Hiers because the references, taken singularly or in combination, do not teach all of the claimed limitations, do

not contain the required suggestion or motivation to combine, and/or provide no reasonable likelihood of success.

Nomura and Flocke are discussed in detail above.

Hiers an acoustical barrier 10 including a non-woven first layer 13, a non-woven low density second layer 15, and a high density intermediate acoustical barrier layer 14. Col. 6, lines 54-63. The reference does not teach a sound shielding element including a panel or layer having perforations therethrough nor a method of forming such panel or layer, as recited in the presently appealed claims. Accordingly, Hiers does not add anything of merit to the relied upon, previously discussed, references.

Claims 34 and 35 variously depend from allowable claim 29 and are thus correspondingly allowable. Further, claims 34 and 35 recite additional limitations clearly not found in Nomura, Flocke, and/or Hiers.

Accordingly, the Examiner's rejection of claims 34 and 35 under §103 in view of Nomura, Flocke, and Hiers is improper and may not be maintained.

E. Conclusion

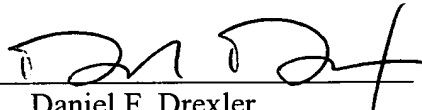
For at least the reasons cited above, Appellants respectfully submit that the rejections issued by the Examiner under 35 U.S.C. §§102 and 103 are improper. Appellants respectfully request reversal thereof.

The Office is invited to contact Appellants' attorneys directly at the below telephone number concerning this Appeal Brief or otherwise regarding the present application.

If there are any additional charges with respect to this Appeal or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Appellants' attorneys.

Respectfully submitted,

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9. **APPENDIX A**

Appealed Claims

1. Sound shielding element for protection from the propagation of sound from a noise area of a room or space into a neighboring room or space, comprising: at least one panel or layer; and

a plurality of small perforations formed in said at least one panel or layer;

wherein an average diameter or width of said perforations ranges between 0.001 and 0.7 mm and a hole/surface ratio ranges between 0.001 and 8 % so that sound waves entering said perforations initiate physical effects in a gas volume contained in said perforations.

2. Sound shielding element according to Claim 1, wherein said sound shielding element is adapted to cover at least one of sound-reflecting and sound generating structural parts.

3. Sound shielding element according to Claim 1, wherein said panel has a thickness between 0.05 and 4 mm, and wherein the average diameter or average width is between 0.01 and 0.7 mm and the hole/surface ratio is between 0.01 and 5 %.

4. Sound shielding element according to Claim 1, wherein said panel or layer is made of polypropylene.

5. Sound shielding element according to Claim 1, wherein said perforations are configured as narrow or fine slots having width between 0.02 and 0.18 mm and a length between 0.02 and 30 mm.

6. Sound shielding element according to Claim 5, wherein said slots have width between 0.08 and 0.15 mm and slot length between 0.8 and 2.2 mm and are disposed at an offset at a spacing transversely to a longitudinal extension by less than half the slot length.

7. Sound shielding element according to Claim 1, wherein said panel is configured as a three-dimensionally shaped moulded part and is injection-moulded or pressed from synthetic material.

8. Sound shielding element according to Claim 1, wherein said panel or layer is three-dimensionally shaped without cutting by stretching.

9. Sound shielding element according to Claim 1, wherein said panel or layer is deep-drawn from a planar plate, board, tape, strip or sheet.

10. Sound shielding element according to Claim 3, wherein said panel presents a thickness between 0.2 and 1 mm.

11. Sound shielding element according to Claim 10, wherein said panel or layer is provided with said perforations in a sieve-like or raster-like form.

12. Sound shielding element according to Claim 1, wherein said panel or layer comprises aluminium, steel sheet, ceramic or a highly temperature-

resistant synthetic material.

13. Sound shielding element according to Claim 1, wherein said panel or layer is used as a covering layer on a sound-absorbing layer including a nonwoven fabric or foamed material or on a chamber-type or membrane-type absorber, and presents the hole/surface ratio between 3 and 10 % and an average hole diameter between 0.1 and 0.5 mm.

14. Sound shielding element according to Claim 1, wherein said element is used as an injection-moulded operating element.

15. Sound shielding element according to Claim 1, wherein said element is used as roof lining in a passenger compartment of motor vehicles.

16. Sound shielding element according to Claim 1, wherein said element is used on an underbody lining of motor vehicles.

17. Sound shielding element according to Claim 1, wherein said element is used as an injection-moulded cover unit for covering cables.

18. Sound shielding element according to Claim 1, wherein said element is a wheel case shell on motor vehicles.

19. Sound shielding element according to Claim 1, wherein said element is a hat rack in motor vehicles.

20. Sound shielding element according to Claim 1, wherein said

element is a seat cover in motor vehicles.

21. Sound shielding element according to Claim 1, wherein said element is a door lining.

22. Sound shielding element according to Claim 1, wherein said element is an absorbing tube for air-conducting tubes.

23. Sound shielding element according to Claim 1, wherein said element is a decorative wheel shield or engine bonnet lining of motor vehicles.

24. Sound shielding element according to Claim 1, wherein said element is a cover for covering at least one part of an internal combustion engine.

25. Sound shielding element according to Claim 1, wherein said element is a luggage trunk cover.

26. Sound shielding element according to Claim 1, wherein said element is a thermal shielding element.

27. Sound shielding element according to Claim 1, wherein said element is a covering layer on honey-comb composite panels.

28. Sound shielding element according to Claim 1, wherein at least two said panels are spaced from each other and disposed in a substantially parallel arrangement.

29. Method of producing a sound shielding element for protection from the propagation of sound from a noise area of a room or space into a neighboring room or space, the sound shielding element including at least one panel or layer and a plurality of small perforations formed in said at least one panel or layer, wherein an average diameter or width of said perforations ranges between 0.001 and 0.7 mm and a hole/surface ratio ranges between 0.001 and 8 %, the method comprising forming said panel or layer by fusing or bonding particles or fibers.

30. Method of producing a sound shielding element according to Claim 29, wherein said panel or layer is produced by weaving threads formed of fibers.

31. Method of producing a sound shielding element according to Claim 29, wherein said panel is produced by impregnating a textile tissue with a thermoplastic material and molding into a three-dimensional shape.

32. Method of producing a sound shielding element according to Claim 29, wherein said plurality of perforations are produced by electric discharges using an electric arc through said panel or layer.

33. Method of producing a sound shielding element according to Claim 29, wherein said plurality of perforations are produced by bombardment of said panel or layer with particles.

34. Method of producing a sound shielding element according to Claim 29, wherein said plurality of perforations are produced by means of a

needle or cutter blocks.

35. Method according to Claim 34, wherein distortions of said perforation in said panel or layer are closed by pressing by shaping rollers.